MICHIGAN ATARI COMPUTER ENTHUSIASTS

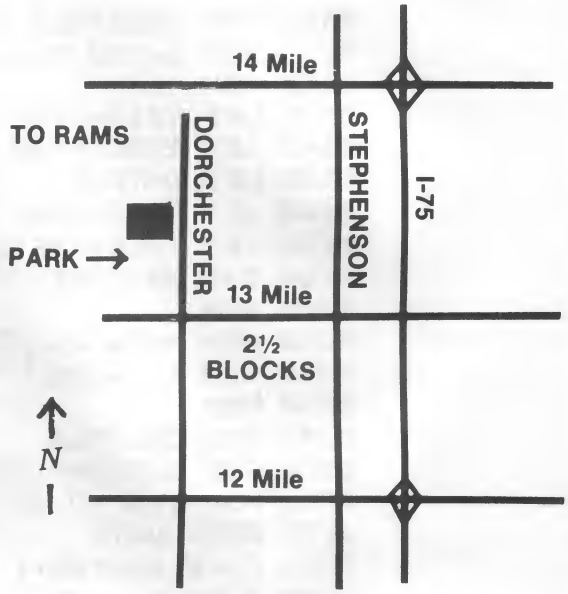
November, 1981 NEWSLETTER

$1.50

MEETING SCHEDULE: NOVEMBER 19, 1981
RAMS COOPERATIVE
31201 DORCHESTER
In the Martha Campbell Elementary School

MEETING AGENDA: 7:30 SHOW & TELL
8:00 TO BE ANNOUNCED

NEXT MEETING: DECEMBER 17



BOOTABLE CASSETTE/DISK TRANSFER
by Edward Schultz Jr.

This program will convert a cassette bootable machine language program into a disk bootable version. The program automatically formats the disk, so do not use a disk which contains data or programs you wish to save. The source program is also provided, which may be used in conjunction with the ATARI Assembler-Editor cartridge, or with OSS EASMD.

The BASIC program provides a convenient method for loading the machine language routine into RAM, and also provides user prompting. Some error checking is done when reading the DATA statements, program execution is stopped if an error is detected. The dimensioned string variable B$ is used as a buffer for data from the cassette. No checking is done to see if enough buffer space is available to transfer the program. The user must determine this by comparing the printed buffer size with the size of the program to be transfered. When the program is done executing, control will return to the calling program (BASIC). The message 'BOOT ERROR' will appear if there is an error detected in reading the cassette or in writing to the disk. Should this occur, the program will self-terminate, and must be restarted when the problem is fixed.

This program does not modify the Volume Bit Map (VBM), or the disk directory, so the disk cannot be used for any other purpose once the boot file is created, or the boot file will be overwritten. There may be some cassettes on which this program will not work. This program only copies the boot sectors from the cassette. If the cassette boots in its own loader to boot in the rest of the program, it cannot be copied with this program. Also if the cassette reads in data from the cassette when executing, it will not function without modification.

continued

```
Ø1ØØ REM BOOTABLE CASSETTE/DISK XFER.
Ø11Ø REM by Ed Schultz Jr. 1Ø/27/81
Ø12Ø REM
Ø13Ø LET EXIT=12ØØ
Ø14Ø LET ERROR=7ØØ
Ø15Ø LET DATA=Ø
Ø16Ø LET CHKSUM=Ø
Ø17Ø LET FREE=FRE(I)-1ØØ
Ø18Ø DIM B$(FREE)
Ø2ØØ REM
Ø21Ø REM Move machine language routine
Ø22Ø REM to $6ØØ.
Ø23Ø REM
Ø24Ø RESTORE 96Ø
Ø25Ø FOR BUFFER=1536 TO 172Ø STEP 16
Ø26Ø FOR I=Ø TO 15
Ø27Ø READ DATA
Ø28Ø POKE BUFFER+I,DATA
Ø29Ø CHKSUM=CHKSUM+DATA
Ø3ØØ NEXT I
Ø31Ø REM
Ø32Ø REM Compare checksum to test for
Ø33Ø REM bad data.
Ø34Ø REM
Ø35Ø READ CHECK
Ø36Ø IF CHECK<>CHKSUM THEN GOTO ERROR
Ø37Ø PRINT BUFFER/1.6;" OK"
Ø38Ø CHKSUM=Ø
Ø39Ø NEXT BUFFER
Ø4ØØ REM
Ø41Ø REM Print instructions.
Ø42Ø REM
Ø43Ø RESTORE
Ø44Ø FOR I=1 TO 17
Ø45Ø READ B$
Ø46Ø PRINT B$
Ø47Ø NEXT I
Ø48Ø PRINT :PRINT "Buffer size:";FREE;" bytes."
Ø5ØØ REM
Ø51Ø REM Wait for user to signal start.
Ø52Ø REM
Ø53Ø PRINT :PRINT "Press 'START' to start transfer."
Ø54Ø IF PEEK(53279)=6 THEN 570
Ø55Ø IF PEEK(53279)=3 THEN GOTO EXIT
Ø56Ø GOTO 54Ø
Ø57Ø PRINT :PRINT "Press 'RETURN' at beep tone."
Ø6ØØ REM
Ø61Ø REM Execute machine language
Ø62Ø REM routine.
Ø63Ø REM
Ø64Ø I=USR(1536,ADR(B$))
```

continued

```
0650 PRINT "DONE"
0660 GOTO EXIT
0700 REM
0710 REM Data error handling routine.
0720 REM
0730 PRINT "Checksum error at line:";
0740 PRINT BUFFER/1.6
0760 GOTO EXIT
0800 REM
0810 REM Data.
0820 REM
0830 STOP
0840 DATA }Bootable cassette to disk transfer.
0850 DATA ,by Ed Schultz Jr.
0860 DATA , ,Put the cassette in the recorder
0870 DATA and position the tape as you normally
0880 DATA would to boot the cassette.  Press
0890 DATA the PLAY button on the recorder.
0900 DATA ,Next insert a disk into disk drive
0910 DATA one.  The program will automatically
0920 DATA format the disk--so an unformatted
0930 DATA disk may be used.
0940 DATA ,Press 'OPTION' if you wish to abort
0950 DATA the program.
0960 DATA 169,33,141,2,3,169,1,141,1,3,104,104,141,254,6,133,1405
0970 DATA 5,104,141,253,6,133,4,32,83,228,48,16,169,128,133,62,1545
0980 DATA 169,1,133,75,32,125,228,32,157,243,16,6,32,129,243,76,1697
0990 DATA 177,6,162,3,189,0,4,157,64,2,202,16,247,173,65,2,1469
1000 DATA 141,255,6,160,127,185,0,4,145,4,136,16,248,24,165,4,1620
1010 DATA 105,128,133,4,165,5,105,0,133,5,206,65,2,240,8,32,1336
1020 DATA 157,243,16,223,76,44,6,169,60,141,2,211,169,0,141,11,1669
1030 DATA 3,169,1,141,10,3,141,1,3,173,253,6,141,4,3,173,1225
1040 DATA 254,6,141,5,3,169,87,141,2,3,32,83,228,206,255,6,1621
1050 DATA 238,10,3,24,173,4,3,105,128,141,4,3,173,5,3,105,1122
1060 DATA 0,141,5,3,32,83,228,16,3,76,44,6,206,255,6,208,1312
1070 DATA 223,96,0,0,0,0,0,0,0,0,0,0,0,0,0,0,319
1200 REM
1210 REM Exit routine.
1220 REM
1230 CLR
1240 END
```

```
0000          0100          .TITLE "Bootable cassette/disk transfer. 10/23/81"
06FD          0110 BUFPTR =     $06FD
03FD          0120 CASBUF =     $03FD
004B          0130 CASSBT =     $4B
E47D          0140 CSOPIV =     $E47D
030A          0150 DAUX1  =     $030A
030B          0160 DAUX2  =     $030B
0241          0170 DBSECT =     $0241
0305          0180 DBUFHI =     $0305
0304          0190 DBUFLO =     $0304
0302          0200 DCOMND =     $0302
0240          0210 DFLAGS =     $0240
E453          0220 DSKINV =     $E453
F381          0230 DSKRDE =     $F381
```

continued

```
0301            0240 DUNIT  =    $0301
0021            0250 FORMAT =    $21
003E            0260 FTYPE  =    $3E
F39D            0270 GETSEC =    $F39D
D302            0280 PACTL  =    $D302
0004            0290 RAMLO  =    4
06FF            0300 SECCNT =    $06FF
0057            0310 WRITE  =    $57
0000            0320        *=   $0600
0600 A921       0330 INVAD  LDA  #FORMAT   ;Format disk drive 1.
0602 8D0203     0340        STA  DCOMND
0605 A901       0350        LDA  #1
0607 8D0103     0360        STA  DUNIT
060A 68         0370        PLA            ;Get buffer pointer from basic.
060B 68         0380        PLA
060C 8DFE06     0390        STA  BUFPTR+1
060F 8505       0400        STA  RAMLO+1
0611 68         0410        PLA
0612 8DFD06     0420        STA  BUFPTR
0615 8504       0430        STA  RAMLO
0617 2053E4     0440        JSR  DSKINV    ;Call disk handler for format routine.
061A 3010       0450        BMI  BADDSK    ;Branch if error in format operation.
061C A980       0460        LDA  #$80      ;Specify short cassette IRG mode.
061E 853E       0470        STA  FTYPE
0620 A901       0480        LDA  #1        ;Set cassette boot flag.
0622 854B       0490        STA  CASSBT
0624 207DE4     0500        JSR  CSOPIV    ;Open cassette file.
0627 209DF3     0510        JSR  GETSEC    ;Get first cassette sector.
062A 1006       0520        BPL  ALLSEC
062C 2081F3     0530 BADDSK JSR  DSKRDE    ;Error handling routine.
062F 4CB106     0540        JMP  EXIT
0632 A203       0550 ALLSEC LDX  #3        ;Get the # of sectors on the cassette.
0634 BD0004     0560 RDBYTE LDA  CASBUF+3,X
0637 9D4002     0570        STA  DFLAGS,X
063A CA         0580        DEX
063B 10F7       0590        BPL  RDBYTE
063D AD4102     0600        LDA  DBSECT    ;Save the # of sectors on the cassette.
0640 8DFF06     0610        STA  SECCNT
0643 A07F       0620 MVBUFF LDY  #$7F      ;Move first cassette sector to buffer.
0645 B90004     0630 MVNXB  LDA  CASBUF+3,Y
0648 9104       0640        STA  (RAMLO),Y
064A 88         0650        DEY
064B 10F8       0660        BPL  MVNXB
064D 18         0670        CLC            ;Load the rest directly to buffer.
064E A504       0680        LDA  RAMLO
0650 6980       0690        ADC  #$80      ;Bump buffer pointer by 128.
0652 8504       0700        STA  RAMLO
0654 A505       0710        LDA  RAMLO+1
0656 6900       0720        ADC  #0
0658 8505       0730        STA  RAMLO+1
065A CE4102     0740        DEC  DBSECT    ;Decrement sector count.
065D F008       0750        BEQ  ENBOOT    ;Branch if all sectors loaded.
065F 209DF3     0760        JSR  GETSEC    ;Get another sector from the cassette.
0662 10DF       0770        BPL  MVBUFF
0664 4C2C06     0780        JMP  BADDSK    ;Jump if cassette error is detected.
0667 A93C       0790 ENBOOT LDA  #60       ;Shut off cassette motor.
```

continued

```
0669 8D02D3 0800          STA  PACTL
066C A900   0810          LDA  #0       ;Set up disk handler.
066E 8D0B03 0820          STA  DAUX2    ;Specify sector number in DAUX1,2.
0671 A901   0830          LDA  #1
0673 8D0A03 0840          STA  DAUX1
0676 8D0103 0850          STA  DUNIT    ;Specify disk drive number one.
0679 ADFD06 0860          LDA  BUFPTR   ;Set up pointer to cassette data buffer.
067C 8D0403 0870          STA  DBUFLO
067F ADFE06 0880          LDA  BUFPTR+1
0682 8D0503 0890          STA  DBUFHI
0685 A957   0900          LDA  #WRITE   ;Specify disk write with verify.
0687 8D0203 0910          STA  DCOMND
068A 2053E4 0920          JSR  DSKINV   ;Call disk handler.
068D CEFF06 0930          DEC  SECCNT   ;Decrement sector counter.
0690 EE0A03 0940 WRSEC    INC  DAUX1    ;Bump sector number.
0693 18     0950          CLC           ;Bump data pointer by 128.
0694 AD0403 0960          LDA  DBUFLO
0697 6980   0970          ADC  #$80
0699 8D0403 0980          STA  DBUFLO
069C AD0503 0990          LDA  DBUFHI
069F 6900   1000          ADC  #0
06A1 8D0503 1010          STA  DBUFHI
06A4 2053E4 1020          JSR  DSKINV   ;Call disk handler.
06A7 1003   1030          BPL  GOON
06A9 4C2C06 1040          JMP  BADDSK   ;Jump if disk error is detected.
06AC CEFF06 1050 GOON     DEC  SECCNT   ;Decrement sector counter.
06AF D0DF   1060          BNE  WRSEC    ;Branch if more sectors to load.
06B1 60     1070 EXIT     RTS           ;Return to basic.
```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QUESTIONS AND ANSWERS

THE QUESTION AND ANSWER BOX by Craig Chamberlain

I was delighted to see that four people had the courage to ask a question. I would appreciate it if future questions would include a name and phone number in case I don't entirely understand the question.

1. *Richard Gizynski asked how a BASIC program can add* DATA *statements to itself while running. A technique for doing this is explained in the September* COMPUTE!, *the* De Re Manual *(Chris Crawford's tutorial), and in this month's* DOWN MEMORY LANE *column.*

2. *The Unknown Questioner wanted information about the I/O port on the side of the computer. Pinouts are given in* Appendix C *of the* HARDWARE MANUAL. *Hopefully Marshall will be able to expand on this topic.*

3. *Another Unknown Questioner inquired if a clock/calender board was available. A device that fits the right cartridge slot (*ATARI 800 *only) is available to perform this function. It has a battery backup, includes software, sells for about $70 and was advertised in a recent issue of* COMPUTE!

4. *Eric Sobociwski asked how to access the sound registers using* POKE *statements. First let's review the four parameters of the* SOUND *statement.*

```
SOUND W , X , Y , Z
```

*The first number (*W*) is from* 0 *to* 3 *and identifies which of the four independent registers is being used. The second number (*X*) is from* 0 *to* 255 *and specifies the frequency of the tone to be generated. The third parameter (*Y*) is the distortion factor. It should be an even number from* 0 *to* 14. *A* 10 *or* 14 *here produces a "pure" tone; other numbers give "poly" tones like the tanks in combat games. The final parameter, (*Z*), a number from* 0 *to* 15, *controls the volume, with* 15 *being the loudest.*

There are eight hardware registers starting at $D200 (53760) *that reference* POKEY, *a special chip inside the computer. The registers occur in pairs, the first location determining the frequency and the second controlling distortion and volume. The operating system equates for the first pair are* AUDF1 *and* AUDC1. *The second parameter, (*X*), can be directly* POKED *to* AUDF1. *The control register is a little trickier. The four most significant bits set the distortion while the lower four bits control the volume. So, multiply the distortion value by* 16, *add the volume number, then* POKE AUDC1. *Therefore, the previously given statement could be rewritten...*

```
POKE 53760 + 2 * W , X : POKE 53761 + 2 * W , 16 * Y + Z
```

Location $D208 (53768), AUDCTL, *can affect some or all of the sound registers. Turning bit zero on will change the base frequency from* 64 Khz *to the much lower* 15 Khz. *That, of course, lowers the pitch. Setting bit six changes the base frequency of the first channel only from* 64 Khz *to the much higher* 1.79 Mhz *for very high pitches.* continued

THE QUESTION AND ANSWER BOX continued

It is important to note that the given hardware locations are write-only and therefore cannot be PEEKED. *More information about all of these registers will be found in the* HARDWARE MANUAL, *section* III, HARDWARE REGISTERS, AUDIO, pp. 12 *to* 14.

Thank you, Richard and Eric, for your questions. I encourage everyone to write down any questions they may have and submit them at the meetings.

Craig Chamberlain 10/28/81

POKES FROM THE PREZ

Thanks to everyone for the great turnout at the October meeting. We should have a larger room next time to ease the sardine simulation we ran at Rams that Thursday night. In an effort to eliminate unnecessary confusion and noise, the disk and tape library tables will be located outside the meeting room in November. If you want to make purchases from the library try to show up a little early. The tables should be set up by 7:15.

I got a chance to read the article Bob MacDowell wrote for this month's issue before we went to press. I'm sure that you will find it as interesting as I did. I must take exception to Bob's claim that the officers of MACE have refused to list our telephone numbers in the newsletter. Frankly, we just never thought of doing it and have not been asked until now. Here are our home numbers:

Arlan Levitan	- 399-8973	- President
Jerry Aamodt	- **574-1020**	- Vice Pres.
Sheldon Leemon	- 398-2608	- Secretary
Judy Braun	-	- Treasurer
Marshall Dubin	-	- Publications Director
Gary Luzier	- 773-3446	- Program Director
Rodney Graham	- **264-6355**	- Tape Librarian
Sam Findley	- 939-3822	- Disk Librarian

The numbers will become a regular part of the officer list normally found at the back of the newsletter. Please don't call very early or late in the day. Also, not every one of us is a programming whiz. We will be setting up a program of providing phone numbers of "experts" you will be able to call on a scheduled basis. Details will be printed in the December newsletter.

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SOFTWARE NEWS

Been thinking of picking up the popular game "Jawbreaker"? Well, the time to make your move is now. Seems Atari Inc. has had a restraining order placed upon On-Line Systems prohibiting further distribution of John Harris's best seller. Atari claims the game is just too close to "Pac-Man", for which they recently purchased distribution rights. On-Lines hi-res adventure, The Wizard and the Princess, should be out in December. Their adult adventure game, Softporn, might be under the counter by the time you read this.

Watch for the release of "Micro Painter" by DataSoft sometime in November.This package will let you create, color, and store hi-res pictures on your 800 or 400. Painter will be priced at $34.95 and be available only on disk. Should make a great stocking stuffer.

As many of you know, the Atari Word Processor is finally available. I plan on a full review of the package in the December newsletter. Rumors aside, Atari has no official plans to release an MX-80 version of this software.

Don't get your hopes up for early availability for Atari's version of Pascal. Sources at corporate HQ will only say "maybe next year". Want some good news? Elton John won't be the only one who can "take you to the PILOT" this quarter. Microsoft Basic on disk (all 25K of it) will follow in 1st or 2nd quarter 1982.

The monthly "Forward Into the Past!" award goes to Atari for their release of Space Invaders in ROM cartridge format. It's exactly the same game as the cassette version, which will be dropped from the catalogue. What's the price of this progress?...the ROM is only twice as expensive ... $39.95.

HARDWARE HAPPENINGS - LIFE IN THE FAST TRACK

The three 810 disk drives we installed fast formatting EPROMS in have experienced no problems. Many thanks to Larry Hitz of the Chicago User Group for sending us a prototype EPROM to burn our own from.

Diskettes formatted on the test drives load files about 30% faster than standard formatted media. Writes take about 2% longer than standard. With write verify disabled the fast formatted floppies write about as fast as they read.

The EPROM developed by our friends in Chigago is slightly faster than the Atari-made fast format masked ROM which will be distributed by Atari Field Service in the "dont hold your breath waiting folks" future. The advantage of the Atari chip will be "just plug it into the board" installation.

Drives manufactured after August '81 are equipped with data separator boards. The new board contains electronics which minimizes diskette incompatibility between drives due to speed variance between units. Contrary to rumor, this board does not let your drive vary its speed to match the speed the diskette was written at. However it works, drives with the board experience far fewer ERROR 144's or BOOT ERRORS on disks written on other drives.

Unfortunately, the data separator board is not yet available as a separate part from Field Service. Like a bolt out of the blue, good

continued

old Chicago Larry called to inform us that Percom data separator boards, originally manufactured for TRS-80 drives, could be installed in Atari 810 drives in lieu of the factory board. One of our members did install the Percom unit in his drive and reports that it works fine, but does require relocating a crystal on the drive controller board. MACE will make technical and installation data available to interested members as soon as we receive it from the windy city.

Any member who would like a burned EPROM and instructions for installation may send a request along with a check or money order for $10.00 to the MACE P.O. BOX. Installation does require disassembly of the 810, cutting three traces on the controller PC board, and adding three jumpers. Unskilled persons SHOULD NOT attempt this or any other modification of factory equipment. User modifications will void the warranty, if any, remaining on the drive and some service centers may refuse to work on a modified drive if service is required in the future. MACE makes no warranties, written or implied, regarding the use, suitability or performance of fast format EPROMS supplied to members. MACE proper will not offer installation of the chips.

MEMBERSHIP RENEWALS

Most of your MACE memberships will run out at the end of the year. Many thanks to those members who have all ready prepaid their 1982 dues. The membership approved annual dues of $15.00 at the October meeting. Current MACE members who renew before December 1 will receive two coupons worth one dollar each toward purchase of disks or cassettes from the program library. It's just our way of saying "thanks" to the membership for the support and enthusiasm which has made MACE the best ATARI user group in the country.

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THE OTHER SIDE OF THE FENCE

By Bob MacDowell

I do not own an Atari computer. I want to, though. I do own an Apple][and I prefer it to the Atari with two obvious exceptions: graphics and sound. I also like the Atari's sound and graphics. Oh yes, and the graphics and sound.

Sitting next to my Apple is an Ohio Scientific C1P computer which I won as a door prize at a computer show. I now use it as a shelf, but someday it'll be running my printer. Imagine a 48K intelligent printer buffer!! I also have a Z-80 Softcard which means I effectively have a TRS-80. So, you might ask, why would someone with an Apple, an OSI C1P, and a TRS-80 but not an Atari be writing for an Atari newsletter?

MACE is a new group, and the Atari is a new computer. I am a veteran of an old computer users group (the Michigan Apple) and an old computer. I have seen the successes and errors of both and I feel that my input could be helpful. For example, the officers of MACE have refused to publish their phone numbers, fearful of the hacker who calls at 1:26 AM. It seems that none of the officers of the Michigan Apple club (which is three times larger) has EVER had that problem, or knows anyone who has! By the way, My phone number is 855-2998. Touche.

I can also present useful news and information from outside the Atari world, which is precisely what I intend to do now that I'm finished boring you. Last issue some phone numbers of free computer bulletin board systems were printed. The trouble was, some numbers were obsolete, one (228-0335) was mistyped, and several more needed explanation. I will go into depth about all of these as soon as I tell why they all exist.

In the beginning, there was the telephone company. The telephone company developed the modem, saw that it was good, and tried to get a monopoly on it. They failed, and a lot of companies started making modems too. Then along came the personal computer, and people plugged modems into their computers. The trouble was, there was nobody to call. So a company called D.C. Hayes figured that if they made a modem that could be called to by all those other modems out there, they would make many bucks. And that's exactly what they did. The Micromodem could plug into at first old-style S-100 computers, then the sleek and powerful Apple II. These new modems were called auto-answer modems because they would answer the phone and connect with a modem that called them. Automatically, if you hadn't figured that out. (In all fairness, there are several other companies who make products similar to the Micromodem.)

The obvious thing to do when you have an auto-answer modem is to give people reason to call you. So the Computer Bulletin Board System (CBBS) was born. It was impractical to charge for the use of one of these CBBS's so nobody did. Anybody can call, free.

The appearance of these public domain services solved the problem of another public domain service - software. Many computer clubs had a public domain software library - members could contribute and obtain gobs of not great but free programs. The problem was distribution. Ask our program librarian about distribution. <snarl>. Wouldn't it be great if contributors and obtainers could call into a system and exchange stuff over phone lines? And that's what a program exchange is. (What, you may ask, should those who don't have modems do? Answer: If you're too cheap to buy a modem, tough buffalo chips. Seriously, become a friend of someone who has a modem.)

The following is some information about what's out there. Most systems present information about how to use them, but it's hard to use once it's scrolled off the screen. There are no Atari CBBS's as of yet, but quite frankly, I could set my Apple up as a CBBS and say it was an Atari, and you'd have no way of knowing what it was. continued

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THE OTHER SIDE OF THE FENCE

FIRST, THESE ARE **** WRONG **** PHONE NUMBERS: 228-0335, 484-0732, 584-1044. BY THE WAY, THIS IS IN UPPER CASE TO GET YOUR ATTENTION AND IT WORKED DIDN'T IT!! 228-0335 IS A TYPO AND SHOULD BE 288-0335. IT IS THE COMPUTER MART CBBS. 484-0732 *WAS* THE PET BBS. IT EXISTED A YEAR AGO BUT HAS BEEN ** EXTINCT ** FOR AT LEAST 6 MONTHS. 584-1044 WAS MOVED OUT OF STATE LAST MONTH. ALSO 729-1905 WOULDN'T ANSWER SO I HAVE NO IDEA WHAT IT IS.

First, the CBBS. A long time ago (1978) two guys, Ward Christensen and Randy Seuss, put together the first CBBS in Chicago. Then they wrote an article in BYTE magazine about it and suggested a nationwide standard -theirs. Most everybody accepted their idea, so now if you know how to use one CBBS, you know how to use them all. With a couple of exceptions called "FORUM-80", which I'll get to later.

The CBBS has several major commands: Enter messages, Search for and Retrieve messages, Help, and Goodbye.

E is used to enter a message. You will be asked the title of your message and who you want to read it. Say "ALL" if your message is of general interest. You can protect your message with a password, it'll ask you if you do. Then you enter your message, up to 16 lines long. Enter a blank line to stop. On some systems you must type "S" to Save your message. Like this:

```
FUNCTION:?e

TITLE (UP TO 25 CHARS. MAX)
? demonstration
TO:? all
SHOULD THERE BE A PASSWORD
? yes
WHAT IS IT? boom
PRESS RETURN WHEN FINISHED
1:?now i enter my message
2:?here. i enter a blank
3:?line when i'm done.
4:?
COMMAND:(A,E,L,R,S,?):? s
MESSAGE ENTERED.
NEXT MSG WILL BE #1234

FUNCTION:?
```

The S function (for Search or Summary) will allow you to see the titles, senders, and 'addressees' of each message. When you type "S" the CBBS will ask you which message number to start at. Then it will give you the message number and information on that message. Some systems will allow you to search messages for keywords, but the techniques for doing so are not standard. Here is an example of S in use:

```
FUNCTION:? s
SEARCH FROM WHICH MESSAGE
# (1-1104) ? 1081
MESSAGE#:1084
TITLE:APPLESOFT COMPILER
FROM:CURT DEEGAN TO:ALL
   E:7/11/81

MESSAGE#:1099
TITLE:ATARI MEETING
FROM:BOB M. TO: ED CHU
DATE:7/18/81

MESSAGE#:1104
TITLE:WOW!
FROM:ARTHUR PERIWINKLE
TO: ALL DATE: 7/21/81

FUNCTION:?
```

The Q for Quick summary works the same way but only prints the title and message #.

R means Retrieve message. Type R and the CBBS will ask you which message number to retrieve. Just give it the number of the message you're interested in and it will print the information that "S" prints followed by the message itself.

There are two forms of Help on a CBBS. When it says FUNCTION:? you can type "?" and get a list of commands. There is also the H command which will give detailed information about how to use the other commands. continued

...o get off of a CBBS type G for ...bye. You can leave a message to ...ever runs the CBBS at this time.

There are three CBBS's in the ...etroit area: the Computer Mart CBBS at 288-0335, the Computer Connection ABBS at 477-4471 evenings only, and the Michigan Apple-Fone at 357-1422. An ABBS is a CBBS run on an Apple II.

The Michigan Apple-Fone is the most powerful ABBS in the country and we are fortunate to have it locally.It has a commAnd that no other CBBS to my knowledge has: the Catalog function. The Apple-Fone is really four ABBS's in one. With the Catalog function you can enter one of four catalogs: ABBS catalog, which is for general interest messages, the Fone catalog, which contains messages pertaining to the operation of the Apple-Fone; the Mailbox catalog, which is for 'mail' to a single person; and the Tradingpost catalog, which is for "For Sale" messages and such. Type C and you will be asked which catalog you want to go into. Type either A, F, M, or T. Be aware that when you first log on, you are in the A (ABBS) catalog.

The Apple-Fone is run on a fully expanded Apple with three disk drives, a clock, a modem, and about 80k of memory. It is up 24 hours a day. The Computer Connection ABBS runs on a huge 20 million byte disk drive and is up evenings and Sunday. The Computer Mart CBBS is also a 24 hour service.

CP/M is an operating system that makes a very nice program exchange. People can call in and load or save programs from the disk. There are few commands in CP/M, since CP/M is only a simple disk operating system, and many commands such as delete have been removed to keep people from destroying the system.

CP/M gives the disk drives letter names A, B, or C. A file name in CP/M is similar to an Atari disk file name: 8 letters,a point, then 3 letters -like FILENAME.EXT or HANGMAN .BAS. CP/M also adds the drive name with a colon to the front of the name -like A:HANGMAN.BAS. CP/M says "A½" "B½", or "C½", depending on which disk drive you are presently using, when it wants you to enter a command. These are the commands:

"A:", "B:", or "C:" allows you to change the disk you're using. Bear in mind that some systems do not have 3 disk drives, so drive C won't exist. After using this command, the prompt A½, B½, or C½ will reflect your change. If given a prompt of A½, you type B:, the next prompt will be B½.

DIR allows you to get a directory of a disk. You can type DIR alone, which will tell you what programs are on the disk that you're using. You can also get directories of other disks. Typing DIR B: will get you a directory of disk B, regardless of which disk you're now using.

TYPE will list a program from the disk. Some systems have a special command called CLIST which they suggest you use instead of TYPE. What these do is print a file from the disk so that you can read it, or better yet, load it into your Atari. I recommend that you only look at files ending in .BAS, which are Basic programs in text form, of .DOC. which are documentation for something else. The only other ones that are readable are .ASM files, which are 8080 assembly language source files. You can't use them since 8080 code is greek you your Atari's 6502. Oh, yes. To use TYPE, say TYPE then the name of the file you want to see. For example, TYPE STARTREK.BAS will get you a listing of a star trek program in Microsoft Basic. If you load this into your Atari, you must translate it to Atari Basic before it'll work. All Basic proggrams in CP/M systems are written in Microsoft 8080 Basic, which is probably pretty close to the Basic Microsoft is writing for the Atari.

MINICBBS or RBBS puts you in a small CBBS, just as you might have guessed. This is just a stripped down version of the real thing, and it works exactly the same. The only difference is that the "G" (goodbye) command returns you to CP/M instead of hanging up.

BYE must be typed from CP/M to leave the system. DON'T JUST HANG UP, SAY BYE!! Doing so is the only way CP/M has of knowing you are hanging up.

There are four CP/M systems in the Detroit area. 535-9186 has 2 disks (A: and B:). This system does not recognize normal backspace codes so you may have trouble using it.

continued

846-6127 has 3 disks (A:, B:, and C:) with a combined capacity of 1,200,000 bytes. this one has a lot of stuff on it. 559-5326 has 2 disks on it.

One system stands out in the Detroit area. Keith Petersen's machine has - get this - ten MILLION bytes of storage. The number for this is 588-7054 BUT to call in, you must call twice. First call, let it ring once, then hang up. Then, call in with the modem.

Kieth's system has 2 sets of 2 disks. The first set is a pair of minifloppies, the size of the Atari 810 disk. He also has two hard disks. To switch from floppy to hard disk, type the command BOOTHARD. To return to the 5 inch minifloppy, type the command between apostrophes: '5"' (the digit 5 followed by a double quote). There is a better explanation of this in the system.

There are two FORUM-80 systems in this area: the Pontiac Forum-80 at 335-8456 and the Medical Forum-80 at 465-9531. The latter is just what it sounds like: medical. The Forum-80 a CBBS only in the loosest sense the word: messages are sent and recieved on it. Other than that, the Forum-80 is radically different from the traditional CBBS. First, all the systems seem to be identical: TRS-80, 48K, 4 disks: two 40-track disks, two 80-track, all double density. (It doesn't matter from a user's point of view since you never use the disk directly.)

Forum-80's are menu-driven, just like Atari DOS. Because of this, they are very easy to use. I called into one for the first time and immediately knew how to do just anout everything. I left, retrieved, and scanned through messages with no problem at all since my choices were clear cut and before me at all times.

533-0254 is a TRS-80 download system. By telling this system your VISA card number, you can buy TRS-80 programs over the phone. Pretty nifty, but useless to any of us.

* Please note all instances of the "½" symbol are supposed to be "greater than" signs.

OCTOBER MEETING MINUTES

Sheldon Leemon, Secretary

We had a lot of new faces at the October meeting at RAMS. The meeting started out with Don Goldsmith showing off his disk drive modifications. The first of these was a potentiometer with a vernier dial to allow control of the drive speed (often the culprit responsible for hard-to-load disks and 144 errors). Don has since installed a Percom data separator board, similar to the one in the new Atari drives, which enables you to have a much greater variation in drive speed before problems occur. The next improvement was the new fast-formatting EPROM which Don installed in his drive. You might have noticed that programs from Atari load faster than your own. This is because there is a way of formatting the disk which enables a 30% quicker read time. Although Atari has not released the new ROM required to do this formatting, Larry Hitz of the Chicago Users' Group has kindly given us directions for burning EPROMs which do the job (after a a few circuit-board modifications). This should mean that in the near future, MACE disks will all be fast-formatted.

The next Show-and-Tell speaker was your secretary, Sheldon Leemon. I demonstrated my character-set editor, called INSTEDIT, which is available to local MACE members through the club for $6 (including a 20-page users' manual). It has also been accepted for publication by Atari's Program Exchange. Look for it in the December catalog. Modesty almost, but not quite, forbids me from adding that Atari has called it "the best character-set editor we've seen".

Having finished the plug, I would like to add that one small problem cropped up in my demonstration. The disk version which was available at the meeting had one of the menu items mislabelled. It is quite easy to fix this; all you have to is change the wording of line 32000. Where the word "CLEAR" appears in inverse video, simply type in "COPY ", also in inverse video. Remember the space after COPY--its one letter shorter, and if you don't add the inverse video space the menu will look funny. Future MACE versions will have the corrected menu.

During the business meeeing, the members accepted without opposition the Treasurer's proposal that 1982 dues be increased to $15. That level should allow us to retain services at least at the existing level through next year. Dues will be payable in January, but early payment will be gratefully accepted. The membership also passed a motion that the club mailing list be provided to advertisers on request. Those of you who would rather receive only bills in the mail should inform the Newsletter Editor in writing that you wish to be deleted from the advertisers' list.

continued

The main program of the evening featured a discussion of hardware interfacing techniques by Marshall Dubin and Al Pallazo. The members were shown how it is possible to hook up the Atari to relays and stepper motors, allowing the computer to control mechanical and electrial devices. Although everyone may not have been able to follow the technical details, it was nonetheless interesting to see what kinds of things it is possible to do with the computer, and we would like to thank our speakers again for the fine presentation.

For the next meeting, consider what kinds of committees you might like to see established to help the club better serve its members.

ATARI SPIROGRAPH

Submitted by Tom Giese

Here's a great demo of quick Atari graphics from the MACE program library.

```
 5 MI=PEEK(54286):NQ=PEEK(53774):QC=PEEK(54272):POKE
54286,0:POKE 53774,0:POKE 54272,0
10 DIM S(360),C(360)
15 FOR X=0 TO 90
20 READ A:B=A*0.095:C=A*0.105
25 S(X)=B:S(180-X)=B:S(180+X)=-B:S(360-X)=-B
30 C(270+X)=C:C(90+X)=-C:C(90-X)=C:C(270-X)=-C:NEXT X
35 GRAPHICS 8+16
40 X=PEEK(560)+256*PEEK(561)
50 FOR Y=X TO X+200
60 IF PEEK(Y)=79 THEN POKE Y,78
70 IF PEEK(Y)=15 THEN POKE Y,14
80 NEXT Y
90 X=160:Y=96
95 POKE 54272,QC:POKE 53774,NQ:POKE 54286,MI
100 COLOR 125:PLOT 1,1
110 COLOR 1:C=INT(16*RND(1)):SETCOLOR 0,C,4:SETCOLOR
1,C,6:SETCOLOR 2,C,8
120 A=100*RND(1):B=100*RND(1)
125 PLOT X,Y:FOR C=1 TO 200
130 N=N+A:IF N>360 THEN N=N-360
135 M=M+B:IF M>360 THEN M=M-360
140 O=S(N)*0.01
150 X=C(M)*O+160
160 Y=S(M)*O+96
170 DRAWTO X,Y:NEXT C
180 GOTO 100
500 DATA 0,17,34,52,69,87,104,121,139,156
510 DATA 173,190,207,224,241,258,275,292,309,325
520 DATA 342,358,374,390,406,422,438,453,469,484
530 DATA 499,515,529,544,559,573,587,601,615,629
540 DATA 642,656,669,681,694,707,719,731,743,754
550 DATA 766,777,788,798,809,819,829,838,848,857
560 DATA 866,874,882,891,898,906,913,920,927,933
570 DATA 939,945,951,956,961,965,970,974,978,981
580 DATA 984,987,990,992,994.996,997,998,999,999,1000
```

BAKER STREET BYTES

By RICHARD GIZYNSKI

The following program started out to show you how strings can be cleaned, contracted, concatenated and manipulated. In the process, I found out so many interesting things that I felt that the article should be broken into smaller segments. If you load the program and follow the instructions in the REM statements, you will open the door to many interesting discoveries.

Whether you program in BASIC, Assembler or some other language, Atari processes all programs in machine language. When your Atari is turned on, the free ram contains a lot of zeros. Load a program and starting with location about 2041 you start changing those zeros to other numbers which Atari uses.

At the end of the program, the Atari reserves a small amount of space that is used for direct entry statements. After this reserved space is the space reserved for strings by a DIM statement. This area has some very interesting properties, which is what this article is all about.

If you load a program and don't run it, your Atari does not reserve any space for strings. Only when Atari recognizes an active DIM command, does it provide the needed space. It does this by keeping the starting and ending addresses of each string in a seperate list. It also maintains another list with the length of each string in the space that is reserved. The second list is activated by a STRING$= statement or a STRING$(aexp,aexp)= statement.

Since you do not have to use all of the string, and you may want to manipulate the part that you did use without using the rest, The second list is used to control what part of the available string PRINTs etc. It is easy to see that this second list has a lot of changable numbers in it. But the first list, that dealing with where the string is at any time, also changes.

This brings us to the program below. When you type in the program, CSAVE it, TURN OFF YOUR MACHINE!! Then, when you CLOAD the program there is a clean memory with only the program in it. Then when you run the program, you get a look at the space reserved for the strings with only a word "HI" at the end. This clean space is full of zeros which has the Atari character of a heart for its symbol. The RUNing of the program DIMensioned the strings.

Next you type, LIST then NEW. You can also type CLR if you want. This will cancel out the starting point of the program. When you back up to lines 110, 120 and 130 and hit return, you are re-entering a three line program. When you RUN the program, the original address of the string A$ changes and A$ now moves closer to the front of the memory.

What you see on the screen is the leftovers from the program that was there before you typed NEW.

Now, to stop the action. After typing RUN for the first (or second or more times) quickly hold down the control key while typing 1. This freezes the action. (The control-1 combination will stop any program routine in progress.) The graphics characters at the beginning of the line are the character equivalent of numbers located in that position of the A$ string. The first character translates to the line number the second to zero, the third and fourth to a number one larger than the length of the REM line, the fifth to a zero.

Now, again hold down CONTROL while typing 1, then do it again when the screen flips. Your are now looking at the machine code for the program that you are running followed by the Hearts that represent the as yet unused portions of memory.

One more experiment. Run the program again and after a second hit the BREAK key. It will take your Atari a few seconds to come to a stop. It will stop printing out the line immediately but is not available for anything else untill it finds the end of the string. The longer the string the longer the wait.

For those of you with smaller than 16K DIM your string to a number 200 less than the number printed out when you type PRINT FRE(0). The Atari needs some room between the program and the string to use when you enter direct commands. For those of you with 48K memories, the largest string that you can use is 32767. You will get an error message if you try to use a larger number for the Atari uses only 15 bits of a two byte list to keep the length of the string. Remember, if you want to

continued

play with more of the memory limits you can use other strings, as long as the combined length of the strings are about 200 less than FRE(0).

```
10 REM TESTING THE ATARI STRINGS
11 REM AND MEMORY FOR 48K ATARI'S
12 REM AND LESS
13 REM
14 REM BY RICHARD GIZYNSKI
15 REM
16 REM
17 REM INSTRUCTIONS:
18 REM
19 REM TYPE IN THIS PROGRAM INCLUDING
20 REM THESE REM STATEMENTS.
21 REM
22 REM NEXT CSAVE THE PROGRAM.
23 REM
24 REM NOW TURN OFF YOUR ATARI. THIS
25 REM IS AN INPORTANT STEP IN THE
26 REM DEMONSTRATION.
27 REM
28 REM NEXT CLOAD THIS PROGRAM.
29 REM
30 REM TYPE RUN.
31 REM
32 REM YOU WILL SEE A LOT OF HEARTS
33 REM APPEAR ON THE SCREEN. THESE
34 REM HEARTS ARE THE ATARI CHARACTER
35 REM FOR ZERO. THEY SHOW YOU THAT
36 REM THAT POSSIBLE CHARACTER IN THE
37 REM STRING IS EMPTY, BUT STILL
38 REM BEING HELD OPEN.
39 REM
40 REM NOW TYPE LIST
41 REM
42 REM NOW TYPE NEW
43 REM
44 REM NOW MOVE YOUR CURSOR TO LINE
45 REM 110 AND PRESS THE RETURN.
46 REM DO THIS ALSO FOR LINES 120 AND
47 REM LINES 130.
48 REM
49 REM NOW TYPE RUN
110 DIM A$(12441)
120 A$(12440,12441)="HI"
130 PRINT A$
```

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NEXT MEETING: FORTH!

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WORD SEARCH PUZZLE

ATARI!

```
S E M A G N R D G P N V I Q E D E R L V
R J X C I S A B Q L P Z T B F A U L V O
Y A C T I O N J I J D I S C T Z I U M D
O R R K W F D G E L B B Y N M K V L K F
A E M T N A X F R S R O U U S D F Z E M
Q L K G R A P H I C S Z Z U D W I R Y H
H B J T B O U A D V E N T U R E R O W A
M M N O X E S O U N D Q F S F M X L O V
G E I B Y G V C I X U S M N N E L O R S
W S R F K S E I O N V N X L E Y N C D E
P S M W J U T P T E P X J T D H X V O L
O A N Z I N O I T A M I N A U B N P M D
Y R A N I B R H C O E J O I C E D I P D
W X A V C M X D Z K Z R X O A B V L U A
C G U L A C S A P P S R C B T N W O U P
B A O Z M E D O M K I Q C Z I J S T B D
G Z J C L K T I Q T B K C P O T Q J M K
X K O B E T T E S S A C H U N P H P A N
U P Y T N K E Y B O A R D L A Y G B I Y
J Q R H E X A D E C I M A L L V B F S Y
```

WORD LIST

ACTION
ADVENTURE
ANIMATION
ASSEMBLER
BASIC
BINARY
CASSETTE
COLOR
CREATIVE
DISC
EDUCATIONAL
GAMES
GRAPHICS
HEXADECIMAL
JOYSTICKS
KEYWORD
KEYBOARD
MODEM
NYBBLE
PADDLES
PASCAL
PILOT
SOUND
SKILL

```
0 REM **  CIRCLES  **
1 REM ** BY CHARLES L. MILLER **
2 REM ** WARREN WOODS HIGH SCHOOL  1981
**
5 ? ")":? :? "  WHAT GRAPHICS MODE(0,3-8
)";:INPUT G
6 IF G<>INT(ABS(G)) OR G>8 OR (G<3 AND G
<>0) THEN 5
8 G1=(G>3)+(G>5)+(G=8)
10 GRAPHICS G+16:R=4*2^G1:DEG :XMAX=40*2
^G1-2*R:YMAX=24*2^G1-2*R
12 FOR C1=1 TO 6+2*(G1>0)+(G1>1)
20 XCENT=INT(RND(0)*XMAX+R)
30 YCENT=INT(RND(0)*YMAX+R)
35 COLOR INT(1+RND(0)*3)*(G<>8 AND G<>6
AND G<>4)+1*(G=8 OR G=6 OR G=4)
36 XSGN=INT(RND(0)*2):XSGN=XSGN-(XSGN=0)

37 YSGN=INT(RND(0)*2):YSGN=YSGN-(YSGN=0)

40 FOR C=0 TO 360 STEP 15
50 X=XCENT+XSGN*(COS(C)*R):X=INT(X)+1*((
X-INT(X))>=0.5)
60 Y=YCENT+YSGN*(SIN(C)*R):Y=INT(Y)+1*((
Y-INT(Y))>=0.5)
70 PLOT X,Y
71 S=X+Y:S=S-INT(S/256)*256:SOUND 0,S,10
,8
80 NEXT C
90 NEXT C1:FOR C1=1 TO 300:NEXT C1:SOUND
 0,0,0,0:GOTO 5
100 REM ********************************
*****************************
110 REM ** THIS PROGRAM GENERATES CIRCLE
S IN VARIOUS GRAPHIC MODES.
120 REM ** IT IS WRITTEN IN BASIC.
130 REM ** THE HIGHER THE GRAPHICS MODE,
 THE MORE EXACT THE CIRCLE.
140 REM ** THIS PROGRAM USES TRIG FUNCTI
ONS AND BOOLEAN LOGIC.
150 REM ********************************
*****************************
```

ANSWERS TO WORD SEARCH PUZZLE

```
S E M A G - - - - - - - - - - - - - - L -
- - - C I S A B - - - - - - - - - - L - -
- A C T I O N - - - D I S C - - I - - - -
- R - - - - - - E L B B Y N - K - - K -
- E - - - - - - - - - - - - S - - - E -
- L - G R A P H I C S - - - - - - R Y -
- B J - - - - A D V E N T U R E - O W -
- M - O - E S O U N D - - - - - - L O -
- E - - Y - V - - - - - - - - - O R S
- S - - - S - J - - - - - - E - - C D E
- S - - - - T - T - - - - - D - - - - L
- A - - - N O I T A M I N A U - - P - D
Y R A N I B - - C - E - - - C - - I - D
- - - - - - - - - K - R - - A - - L - A
- - - L A C S A P - S - C - T - - O - P
- - - - - M E D O M - - - - - I - - T - -
- - - - - - - - - - - - - - - O - - - - -
- - - - E T T E S S A C - - N - - - - - -
- - - - - K E Y B O A R D - A - - - - - -
- - - H E X A D E C I M A L L - - - - - -
```

THAT'S ALL FOLKS
UNTIL NEXT MONTH!

(M.S.D.)

M.A.C.E., NOVEMBER, 1981

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Program Name _____ Submission Media: Tape ____ Disk ____ List ____

Description _____

Catagory: Business ____ Demonstration ____ Education ____ Game ____ Utility ____ Other ____

Minimum System: Memory ____ K BASIC ____ Assembler ____ PILOT ____ PASCAL ____

Disk ____ Tape ____ Interface ____ Modem ____ Printer ____ Light Pen ____

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```
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- L - G R A P H I C S - - - - - - R Y -
- B J - - - - A D V E N T U R E - O W -
- M - O - E S O U N D - - - - - - L O -
- E - - Y - V - - - - - - - - - - O R S
- S - - - S - I - - - - - - E - - C D E
- S - - - - T - T - - - - - D - - - - L
- A - - - N O I T A M I N A U - - P - D
Y R A N I B - - C - E - - - C - - I - D
- - - - - - - - - K - R - - A - - L - A
- - - L A C S A P - S - C - T - - O - P
- - - - M E D O M - - - - - I - - T - -
- - - - - - - - - - - - - - O - - - - -
- - - - E T T E S S A C - - N - - - - -
- - - - - K E Y B O A R D - A - - - - -
- - - H E X A D E C I M A L L - - - - -
```

THAT'S ALL FOLKS
UNTIL NEXT MONTH!

(M. S. D.)